A NEW SPECIES OF ATHERIGONA RONDANI CAUSING DAMAGE TO WHEAT PLANTS IN WEST PAKISTAN

(DIPTERA: MUSCIDAE)

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In material collected and submitted for determination by K. M. Naqvi, of the Agricultural Research Institute, Government of West Pakistan, were the specimens described here as a new species. I am happy to dedicate the species to its collector, who is engaged in a study of its biology and seeking a means of controlling its "considerable damage to wheat."

Atherigona naqvii, new species

(Figs. 1–5)

Male. Length of wing, 2.7–3.25 mm.

The following parts blackish: ocellar triangle, back of head (except near oral margin), third antennal segment (except extreme base laterally and somewhat more mesally); palpus at base; sclerotized parts of proboscis; thorax (except humeri and approximately apical third of scutellum); apical third of f_1 (except knee); tarsus$_1$ (except last two segments), and a pair of round spots just apicad of midlength of abdominal terga 3 and 4. A pair of faint brown spots on tergum 2 and brown median longitudinal line on terga 2 and 3 usually present. Apical half of t_1 usually more or less infuscated. Remainder of body and legs tawny. Wings wholly hyaline; veins light brown; halter and squama, including margin and very short fringe, whitish. Basal segments of arista sometimes brownish, apical part of arista black.

Whole insect distinctly pruinose, only prosternum and haustellum nearly shining; mesonotum appearing grayish, with narrow brown *dc* lines and often with rather narrow brown line between mesal 2 rows of *acr* hairs.

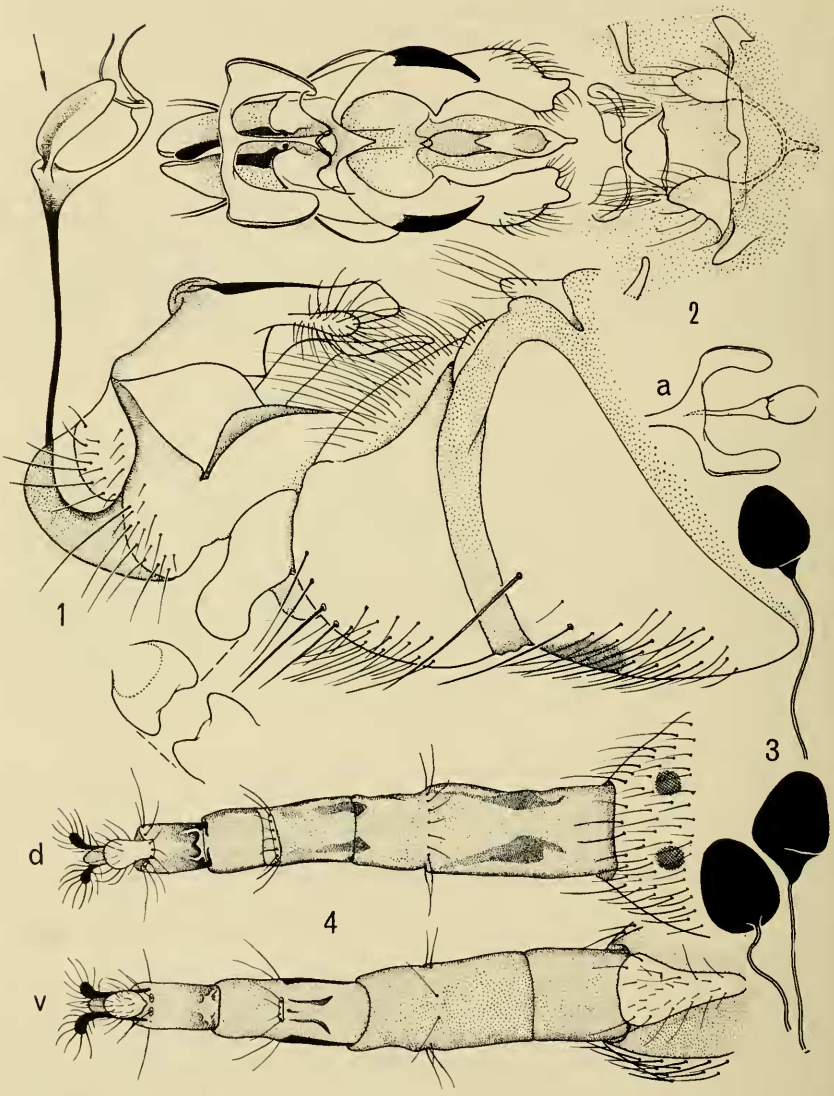
Bristles and hairs black, including those near anus; only apical palpal hairs and those situated ventrally about the copulatory apparatus yellowish.

Head as in figure 5; front at narrowest part (opposite ocellar triangle) 0.28–0.30 of total width of head, medifrons half as wide as front; face deeply, roundingly concave.

Thorax with rather sparse notal hairs; 2 strong posterior *dc*; 4 rows of presutural *acr* hairs, of which the mesal 2 rows diverge markedly toward rear and sometimes have a few hairs between them; 6 rows of postsutural *acr* hairs, including a pair of well-developed *prsc*; largest *pa* a little longer than apical *sc*; subbasal *sc* nearly as long as apicals and preceded by a smaller basal pair about ⅓ their length; *stpl* triangle nearly equilateral, posterior side a little the shortest, ventral bristle weakest and posterior one strongest and longest; 5–6 small hairs also on sternopleuron, of which 1 or 2 are within the triangle; *ppl* 2, long; 1 small poststigmatal.

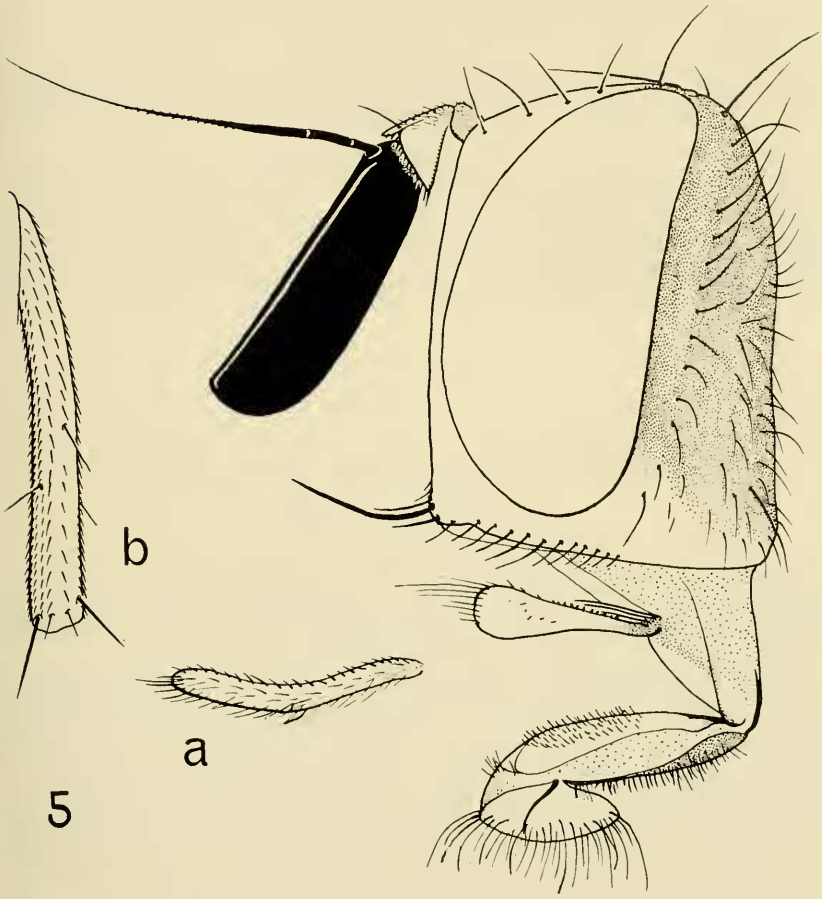
Legs of ordinary shape; f_1 with 2 outstanding preapical *pv*; t_2 with small median *p*; t_3 with *av*, *ad*, and *pd* as in figure 5b.

Wings with *ta* at 0.43 of length of discal cell and opposite end of auxiliary vein; 3rd and 4th veins distinctly converging, last section of 3rd vein with long gentle arcuation, of 4th vein straight.



Atherigona naqvii, new species. Fig. 1, lateral view of male postabdomen; fig. 2, ventral view of copulatory apparatus from direction of arrow in left upper corner, a—trifoliate process of another specimen at different magnification; fig. 3, spermathecae; fig. 4, female postabdomen, d—dorsal, v—ventral view.

Abdomen with lateral marginal bristles of terga 3 and 4 conspicuously longer than others; postabdomen as in figs. 1 and 2; dorsal (hypopygial) process weakly bituberculate, sometimes with median tubercle in dorsal view nearly as long as laterals; trifoliate process as figured (figs. 1, 2, 2a), stem black, only streaks



Atherigona naqvii, new species. Fig. 5, lateral view of head of male; a—palpus of female; b—hind left tibia of male.

on lateral lobes blackish, median lobe yellowish, slender, with 2 long curved filaments, mesad of which are 2 small hairs; ventral receptacular area (right end of fig. 2) with characteristic processes and apodeme.

Female. Similar to male. Length of wing, 3.18–3.53 mm. Palpus (fig. 5a) slender, yellowish, infuscated at base, with short black hairs, the dorsal row of which are spinuliform. Legs with f_1 blackish, except at base; t_1 blackish, except for short distance at base; all tarsi slender, blackish. Wings with *ta* at 0.35–0.37 of length of discal cell and distinctly basad of end of auxiliary vein. Abdomen with all hairs black, dorsal blackish spots rather more pronounced than in male, often with more or less distinct pair on terga 2 and 5 (fig. 4d) and with median line in nearly whole length of preabdomen. Postabdomen (ovipositor) as in fig. 4, with little well-developed sclerotization; spermathecae (fig. 3) 3, black,

obturbinate, with infundibuliform base; spermatic ducts very slender, one considerably longer that the other closely associated 2.

Holotype (male), allotype, and 10 ♂ and 8 ♀ paratypes, Tando Jam (12 km. east of Hyderabad), West Pakistan, ex larvae damaging wheat (K. M. Naqvi), no. 67962 in USNM.

Atherigona naqvii is a member of the typical section of its genus and apparently close to *A. bituberculata* Malloch, but differs therefrom in that its palpus is nearly all yellowish and male postabdominal details are of different shape and color—the trifoliate process largely pale with slender median lobe bearing 2 long filaments and the receptaculum of different structure.

DISCOVERY OF FOSSILS OF HERMETIA ILLUCENS (LINNAEUS) IN MEXICO

(Diptera: Stratiomyidae)[1]

During the course of recent archaeological excavations in the State of Tamaulipas, Mexico, MacNeish (1964, Science 143 (3606: 531–537) and Manglesdorf *et al.* (1964, Science 143 (3606): 538–545) found coprolites containing fossilized dipterous larvae in several caves located in that area.

Through the kindness of Mr. David Marsh of McGill University, specimens of the fossil larvae were examined and determined to be an early instar of *Hermetia illucens* (Linnaeus). The larvae were taken from coprolites that were in turn removed from different cultural levels within the caves. By using the carbon-14 dating technique the oldest specimens were determined to be 4,300 years old and the youngest 260 years old. Since the time differential between the oldest and youngest forms amounts to only some 4,000 years, there is, understandably, no appreciable morphological differences between them and modern day forms. Precisely what instar or instars are represented is impossible to determine because of the dry, compressed condition of the specimens and the lack of distinguishing characters in the early instars of this species. (McFadden 1962, unpublished thesis, Univ. of Alberta).

A representative sample of the specimens was mounted on slides by Mr. Marsh and as far as can be determined are still a part of his personal collection.—Max W. McFadden, *Entomology Research Division, A.R.S., USDA, Mexico City, Mexico.*